

Adding and Subtracting Rational Expressions

Name the least common denominator of the rational expressions.

1. $\frac{5}{3x}; \frac{13}{6x}$ _____

2. $\frac{7}{4x^2y}; \frac{11}{18xy^3}$ _____

3. $\frac{9}{(x+5)^2}; \frac{8}{x+5}$ _____

4. $\frac{10}{y(y-3)}; \frac{5}{6y}$ _____

Add or subtract as indicated.

5. $\frac{x}{9} - \frac{2x}{9}$ _____

6. $\frac{2y+1}{3y} + \frac{5y+4}{3y}$ _____

7. $\frac{6y-4}{y^2-5} + \frac{3y+1}{y^2-5}$ _____

8. $\frac{6}{5x^2y} + \frac{5}{10xy^2}$ _____

9. $\frac{7}{6xy^2} + \frac{2}{9x^3y}$ _____

10. $\frac{3}{8x^3y^3} - \frac{1}{4xy}$ _____

11. $\frac{y}{4y+8} - \frac{1}{y^2+2y}$ _____

12. $\frac{3}{y^2-y} + \frac{y}{7y-7}$ _____

13. $\frac{4}{x^2-25} + \frac{6}{x^2+6x+5}$ _____

14. $\frac{2y}{y^2-4y-12} + \frac{y}{y^2-10y+24}$ _____

Applications

15. **Gardening** It took Stanley $\frac{3}{x+2}$ h to mow the lawn and $\frac{4}{x}$ h to plant a garden. Find the total time he worked. _____

16. **Decorating** Mrs. Hare bought a rug x ft long and y ft wide to use in a room that is $2x$ ft by $y+1$ ft. What is the area of the part of the floor left uncarpeted? _____

MIXED PRACTICE

Perform the operations as indicated.

17. $\frac{6x^2y}{7x} \cdot \frac{5xy^3}{10xy}$ _____

18. $\frac{3}{7x^2y} + \frac{4}{21xy^2}$ _____

19. $\frac{4x-16}{x^2-16} \div \frac{x^2+6x}{x^2+10x+24}$ _____

20. $\frac{x^2y^3-3xy^3}{x^2-2x} \cdot \frac{x^2-4x+4}{xy^3-2y^3}$ _____

21. $\frac{xy-y}{x-2} - \frac{y}{x+2}$ _____